

## CLAIMS

What is claimed is:

- 1           1.     A network comprising:  
2           a first network node; and,  
3           a second network node to wirelessly communication with said first  
4   network node, wherein said first network node securely transmits  
5   communication signals to said second network node using one or more spatial  
6   parameters unique to said second network node.
  
- 1           2.     The network of claim 1 wherein said one or more spatial  
2   parameters include at least one of a position parameter and a velocity parameter.
  
- 1           3.     The network of claim 2, wherein said communication signals are  
2   decodable by said second network node only when said one or more spatial  
3   parameters match a corresponding spatial characteristic of said second network  
4   node.

1           4.     The network of claim 3, wherein said communication signals sent  
2     from said first network node to said second network node are encrypted using  
3     said one or more spatial parameters, and wherein said communication signals  
4     may be decrypted by said second network node using one or more  
5     corresponding spatial characteristics of said second network node.

1           5.     The network of claim 4, wherein a position, velocity, time (PVT)  
2     calculation is used to encrypt said communication signals.

1           6.     The network of claim 5, wherein said PVT calculation is used to  
2     generate a new signal that can only be demodulated by a recipient node that is  
3     located in an intended position.

1           7.     The network of claim 1, wherein said communication signals  
2     include non-position data and relative position information.

1           8.     The network of claim 1, further comprising a master transmitter  
2     that sets the basic frequency and phase of said network and said first and second  
3     network nodes.

1           9.     The network of claim 1, further comprising a plurality of  
2     navigation beacons which transmit position signals to said first and second  
3     network nodes, and wherein said first and second network nodes are position  
4     transponders.

1           10.    The network of claim 9, wherein said communication signals are  
2     synchronized to said position signals.

1           11.    The network of claim 9, wherein said communication signals are  
2     used as ranging signals for other network nodes, said other network nodes to  
3     determine signal propagation time using signal time tagging.

1           12.    The network of claim 9, wherein said position signals are usable for  
2   determining absolute positioning information for said first and second network  
3   nodes.

1           13.    The network of claim 12, wherein said communication signals  
2   include non-position data and absolute position information.

1           14.    The network of claim 9, wherein said communication signals  
2   substitute for said position signals in determining network node position  
3   information.

1           15.    The network of claim 14, wherein said communication signals are  
2   used to provide frequency and signal phase assistance in the determination of  
3   node position information.

1           16.     The network of claim 15, wherein said frequency and signal phase  
2     assistance is used by said first network node to detect attenuated positioning  
3     signals from said plurality of navigation beacons.

1           17.     A positioning device coupled to a network, comprising:  
2             a receiver portion;  
3             a transmitter portion;  
4             a processor coupled to the receiver portion and transmitter portion; and  
5             a memory coupled to the processor to store one or more instruction  
6     sequences, said instruction sequences to cause the positioning device to  
7     communicate wirelessly with a second positioning device by securely  
8     transmitting communication signals to said second positioning device using one  
9     or more spatial parameters unique to said second network node.

1           18.     The positioning device of claim 17 wherein said one or more spatial  
2     parameters include at least one of a position parameter and a velocity parameter.

1           19.    The positioning device of claim 18, wherein said communication  
2   signals are decodable by said second positioning device only when said one or  
3   more spatial parameters match a corresponding spatial characteristic of said  
4   second positioning device.

1           20.    The positioning device of claim 19, wherein said communication  
2   signals sent from said positioning device to said second positioning device are  
3   encrypted using said one or more spatial parameters, and wherein said  
4   communication signals may be decrypted by said second positioning device  
5   using one or more corresponding spatial characteristics of said second  
6   positioning device.

1           21.    The positioning device of claim 20, wherein a position, velocity,  
2   time (PVT) calculation is used to encrypt said communication signals.

1           22.     The positioning device of claim 21, wherein said PVT calculation is  
2     used to generate a new signal that can only be demodulated by a recipient node  
3     that is located in an intended position.

1           23.     The positioning device of claim 17, wherein said communication  
2     signals include non-position data and relative position information.

1           24.     The positioning device of claim 17, further comprising a master  
2     transmitter that sets the basic frequency and phase of said network and said  
3     positioning device and second positioning device.

1           25.     The positioning device of claim 17, further comprising a plurality of  
2     navigation beacons which transmit position signals to said positioning device  
3     and second positioning device, and wherein said positioning device and second  
4     positioning device are position transponders.

1           26.    The positioning device of claim 25, wherein said communication  
2 signals are synchronized to said position signals.

1           27.    The positioning device of claim 25, wherein said communication  
2 signals are used as ranging signals for other positioning devices, said other  
3 positioning devices to determine signal propagation time using signal time  
4 tagging.

1           28.    The positioning device of claim 25, wherein said position signals  
2 are usable for determining absolute positioning information for said positioning  
3 device and second positioning device.

1           29.    The positioning device of claim 28, wherein said communication  
2 signals include non-position data and absolute position information.

1           30.    The positioning device of claim 25, wherein said communication  
2 signals substitute for said position signals in determining position information.



1           31.    The positioning device of claim 29, wherein said communication  
2   signals are used to provide frequency and signal phase assistance in the  
3   determination of position information.

1           32.    The positioning device of claim 31, wherein said frequency and  
2   signal phase assistance is used by said positioning device to detect attenuated  
3   positioning signals from said plurality of navigation beacons.

1           33.    A method comprising:  
2           encoding communication signals using one or more spatial parameters  
3   unique to a second network node;  
4           transmitting said communication signals from a first network node to the  
5   second network node, said first and second network nodes to comprise a  
6   wireless network;  
7           receiving said communication signals by said second network node; and

8            decoding said communication signals by said second network node when  
9        said one or more spatial parameters match a corresponding spatial characteristic  
10     of said second network node.

1            34.     The method of claim 33 wherein said one or more spatial  
2        parameters include at least one of a position parameter and a velocity parameter.

1            35.     The method of claim 34, further comprising encoding said  
2        communication signals using a position, velocity, time (PVT) calculation.

1            36.     The method of claim 35, generating a new signal using said PVT  
2        calculation, where said new signal can only be demodulated by a recipient node  
3        that is located in an intended position.

1            37.     The method of claim 33, wherein said communication signals  
2        include non-position data and relative position information.

1           38.     The method of claim 33, further comprising setting the basic  
2 frequency and phase of said network and said first and second network nodes  
3 using a master transmitter.

1           39.     The method of claim 33, further comprising transmitting position  
2 signals from a plurality of navigation beacons to said first and second network  
3 nodes where said first and second network nodes are position transponders.

1           40.     The method of claim 39, wherein said communication signals are  
2 synchronized to said position signals.

1           41.     The method of claim 39, further comprising using said  
2 communication signals as ranging signals for other network nodes, said other  
3 network nodes to determine signal propagation time using signal time tagging.

1           42.     The method of claim 39, further comprising using said position  
2     signals to determine absolute positioning information for said first and second  
3     network nodes.

1           43.     The method of claim 42, wherein said communication signals  
2     include non-position data and absolute position information.

1           44.     The method of claim 39, wherein said communication signals  
2     substitute for said position signals in determining position information.

1           45.     The method of claim 43, further comprising using said  
2     communication signals to provide frequency and signal phase assistance in the  
3     determination of position information.

1           46.     The method of claim 45, using said frequency and signal phase  
2     assistance by said first network node to detect attenuated positioning signals  
3     from said plurality of navigation beacons.